



Better Buildings Residential Network Peer Exchange Call Series:

Resilience and Energy Efficiency in Low-Income Communities

July 13, 2017

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers
 - **Laurie Schoeman**, National Program Director - Resilience, [Enterprise Community Partners](#)
 - **Mark Drake**, Manager, and **Mugi Lukito**, Program Advisor, [Southern California Gas Company](#)
 - **Ariel Drehabl**, Research Analyst, [\(ACEEE\)](#), *(Network Member)*
- Discussion
- Closing Poll and Announcements

Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Solution Center guided tours

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year.

Upcoming calls:

July 20: [Bullseye: The Advantages of Targeted Marketing](#)

July 27: [Making Program Evaluation Work for You](#)

August 3: [Making The Grade: Innovative Approaches to Improving Quality](#)

August 10: [Doing More with Less: Low Cost Program Strategies](#)

For more information or to join, for no cost, email bbresidentialnetwork@ee.doe.gov, or go to energy.gov/eere/bbrn & click Join

Best Practices: Enterprise Community Partners

Laurie Schoeman, Program Director



Commitment to Public Housing Resilience



Resilience-An
Investment to
Protect and
Strengthen Our
Communities



Laurie J. Schoeman

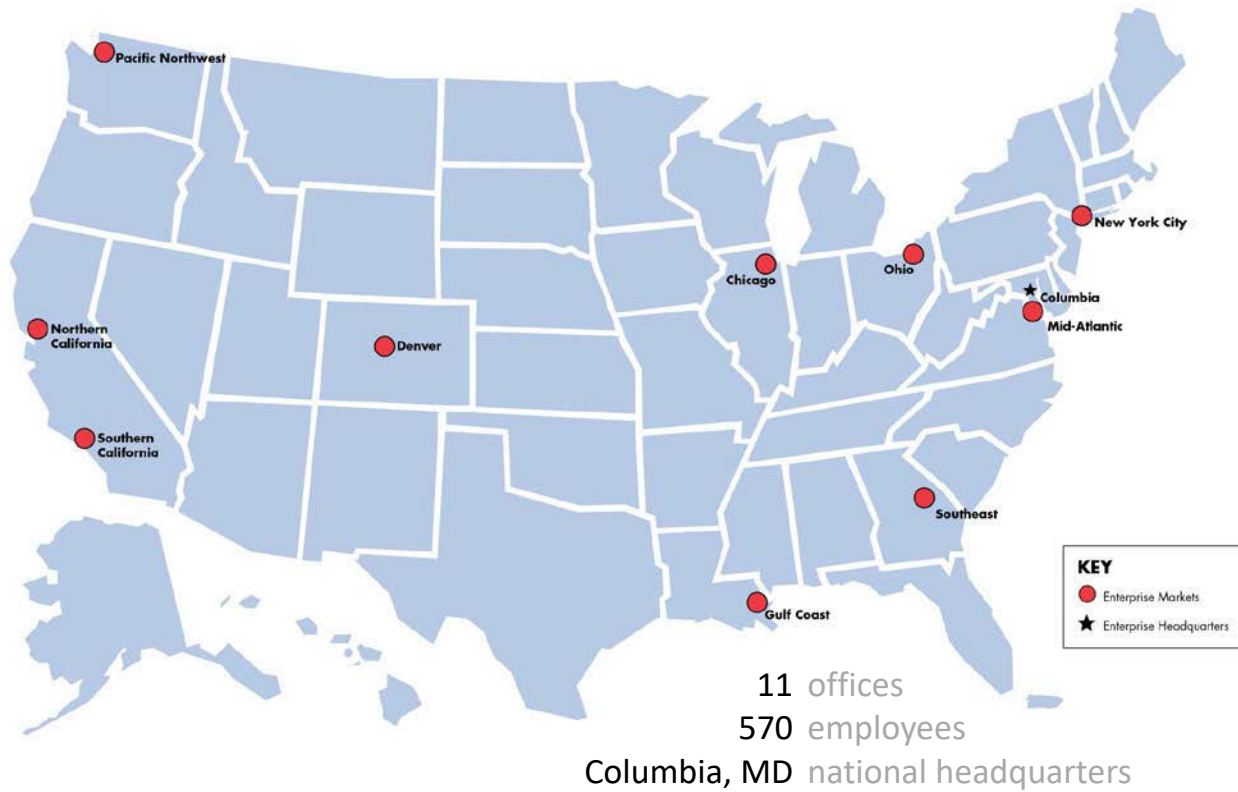
Enterprise Community Partners, Inc.

National Program Director, Resilience



Enterprise: Who We Are

Create opportunity for low- and moderate-



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ROCKEFELLER FOUNDATION

100



CITIES





Enterprise Place Based Work

- New Orleans
- New York City, Long Island, New York State
- Los Angeles
- Atlanta
- Chicago
- Boston
- Baltimore
- Washington D.C.
- Denver
- Portland
- Seattle
- Ohio

FloodHelpNY.org

A project brought to you by:

ENTER for NYC
NEIGHBORHOODS



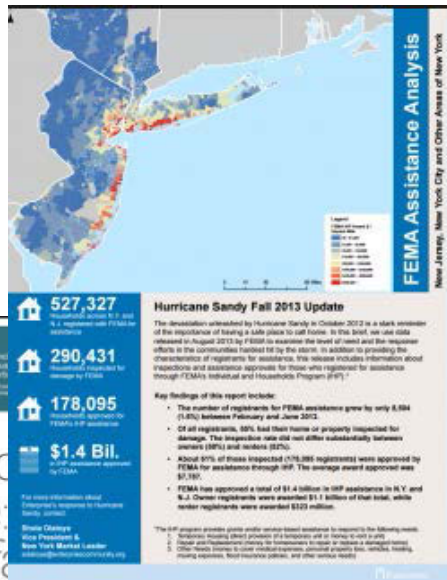
Governor's Office of
Storm Recovery



NYC
Mayor's Office of
Recovery and Resiliency



Scaling Lessons Learned —Informing Policy



Multifamily Flood Insurance Affordability Study

Final Report
April 2016



The Price of
Resilience:
Can Multifamily
Housing Afford
to Adapt?

PIONEERED BY THE
ROCKEFELLER FOUNDATION

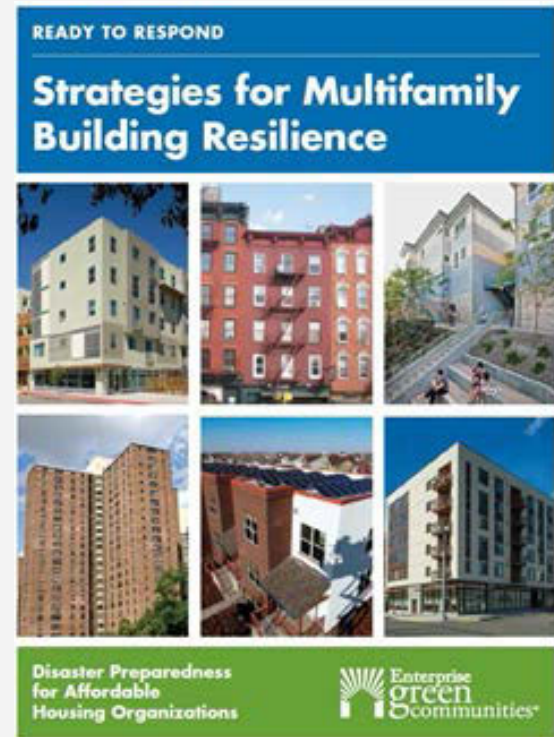
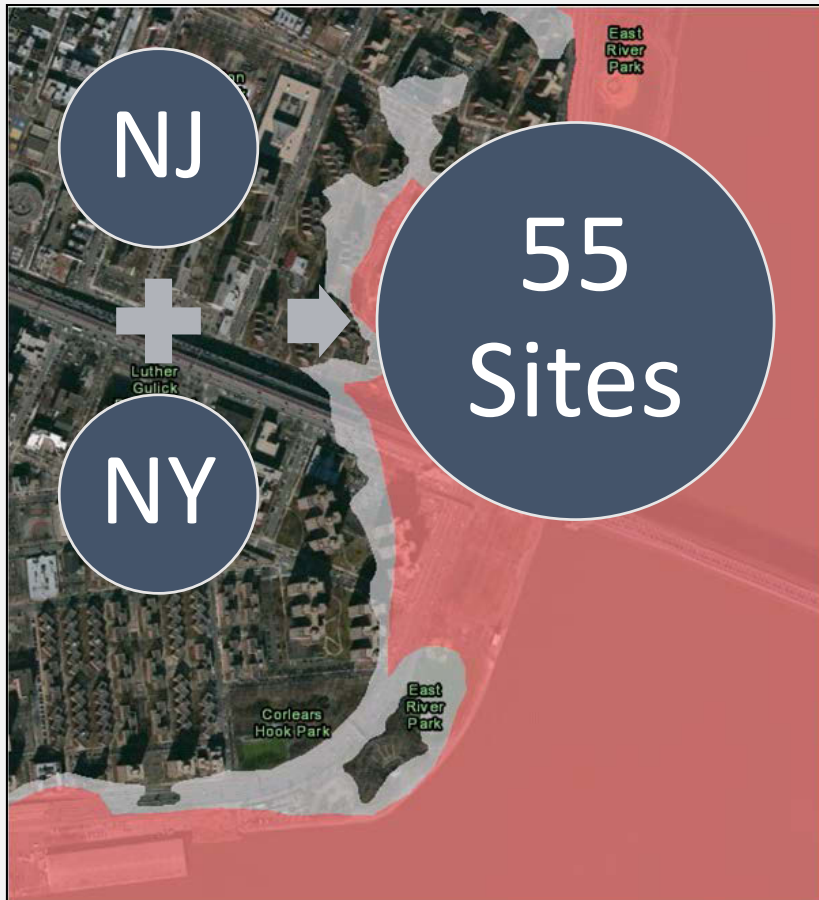
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RESILIENT

CITIES



Resilience is the capacity for households, communities, and regions to adapt to changing conditions and to maintain and regain functionality in the face of stress or disturbance.



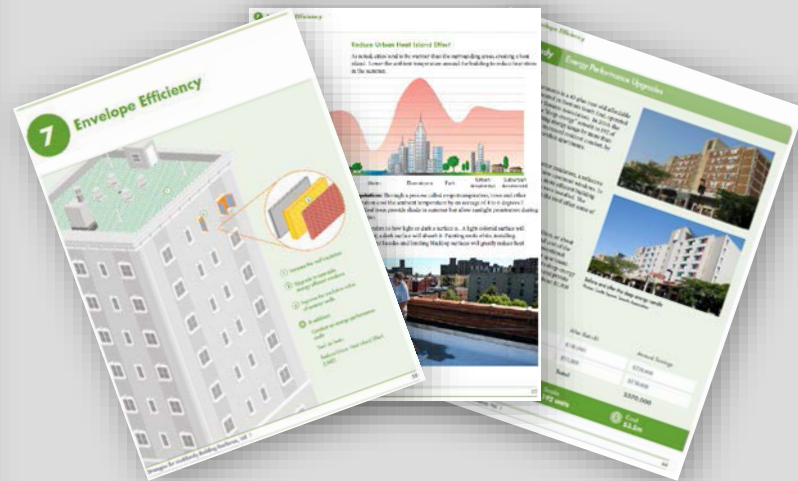
Protection

Strategies that reduce a facility's vulnerability to extreme weather



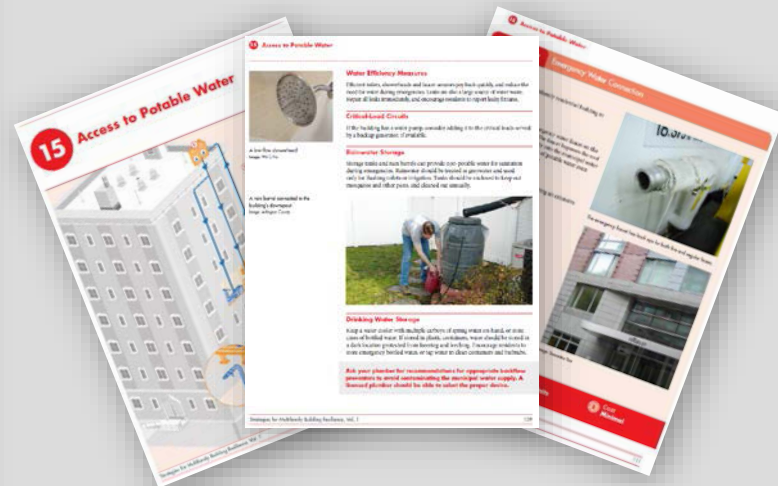
Adaptation

Strategies that improve a facility's ability to adapt with changing climate conditions



Backup

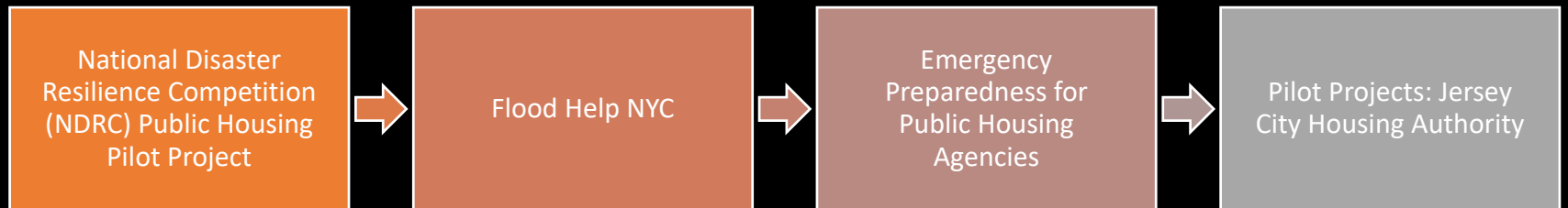
Strategies that reduce a facility's vulnerability to extreme weather



Community

Strategies that encourage changes in behavior to enhance resilience

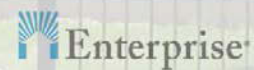






BOOKER T. WASHINGTON HOUSING STORMWATER & RESILIENCY PILOT PROJECT

DRAFT June 12, 2015





Community Risk



BUILDING 8

2050 PROJECTED FLOOD ELEVATION

BASE FLOOD ELEVATION

Building Risk



Include your Residents and Staff in Assessment



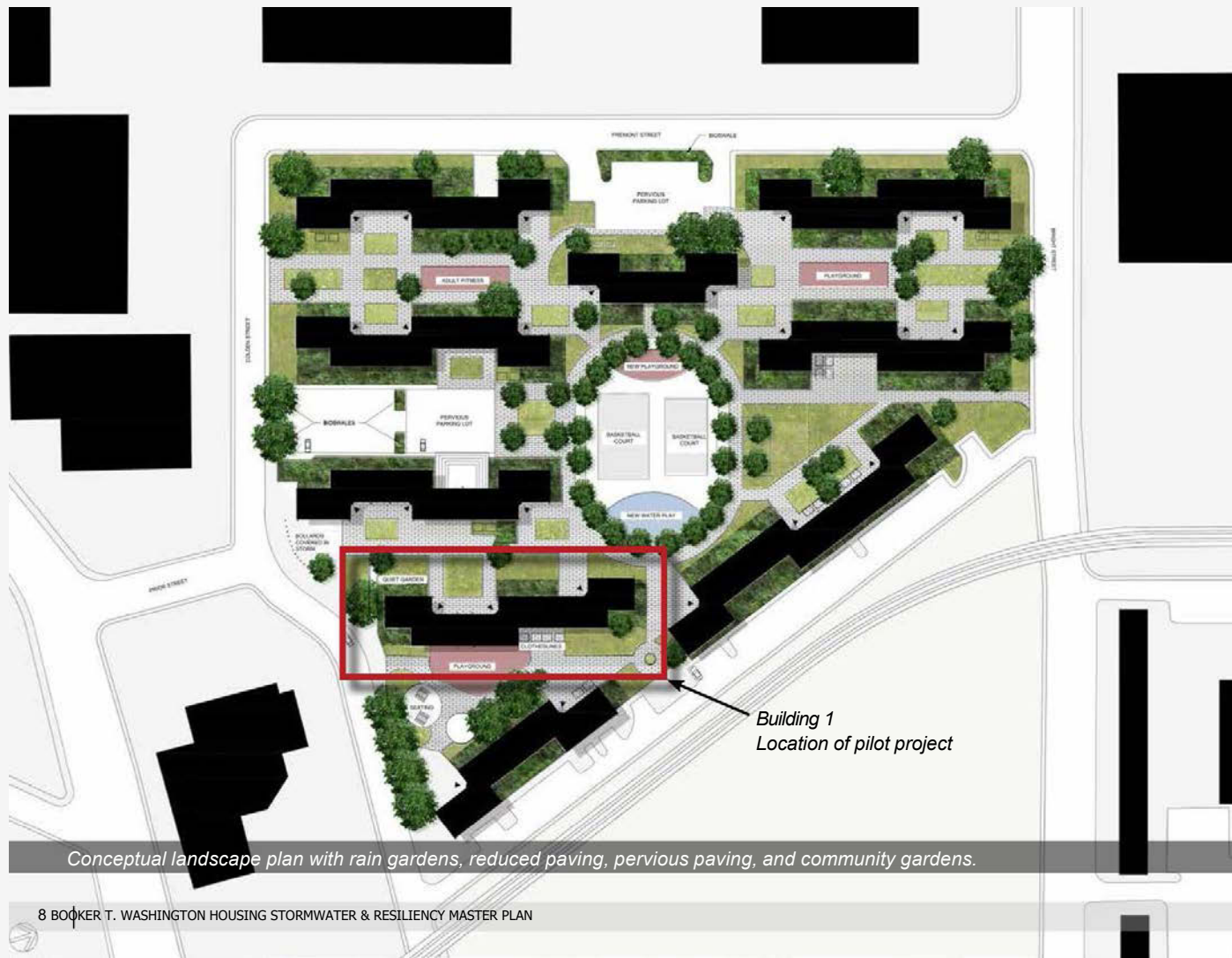
Site-wide Strategies

The general strategy to address these concerns is to redirect storm water out of the existing pipe network and into alternative sustainable drainage systems. Strategies to accomplish this include the addition of extensive rain gardens, increasing the amount of pervious surfaces, and the addition of rain cisterns and storage tanks.

While the cost to modify or replace underground pipes is beyond the funding capacity of a pilot project, it may be possible to inspect them and have them cleaned. Cleaning them will not likely be sufficient to solve the flooding issues; however, it may moderate the flooding to some extent.

Since the flooding is caused by the large cumulative amount of storm water falling across the entire site, the strategies must be implemented across the entire site to have substantial impact and to be effective at addressing storm water issues.





FloodHelpNY.org

A project brought to you by:



Governor's Office of
Storm Recovery





Resilience Capital Needs Assessment Tool

Building and Site Visit Information

Address: Street, Borough, City, Zip

Owner contact name:

Phone:

Email:

Site staff present:

Phone:

Email:

Site visit by: |

Total building area:

Number of floors:

Elevator building: Y/N

How many?

Affordable units: Y/N

Market rate units: Y/N

Insurance: Flood, Fire, Wind

Residence types: Senior, Supported, Family

Residential Unit Count:

Non-residential building uses:

Ground floor uses:

Emergency management plan:

Community room Y/N

Elevation Certificate Lowest floor elevation and flood zone.

Building History

Stormwater flooding: Month/Year, general \$, notes on event

Coastal flooding: “

Sewer backup: “

Gas leak: “

Power Loss of more than 5 Hours: (and cause) “

Wind Damage: “

Lessons Learned

Layer in financing utilizing efficiency and conservation programs.

Incorporate Climate Data in your capital planning:

- HGMP plans at city and state level
- Identify local Resilience staff person
- Engage Office of Emergency Management

Incorporate Strategies in your Capital Planning:

- Permeable Surface work
- Green Infrastructure
- Reduce utility load

Identify frequent shocks

- Sewage Backup
- Pooling water
- Mold
- Power Loss

Incorporate Resident feedback

Work with Community partners to identify community-scale items.



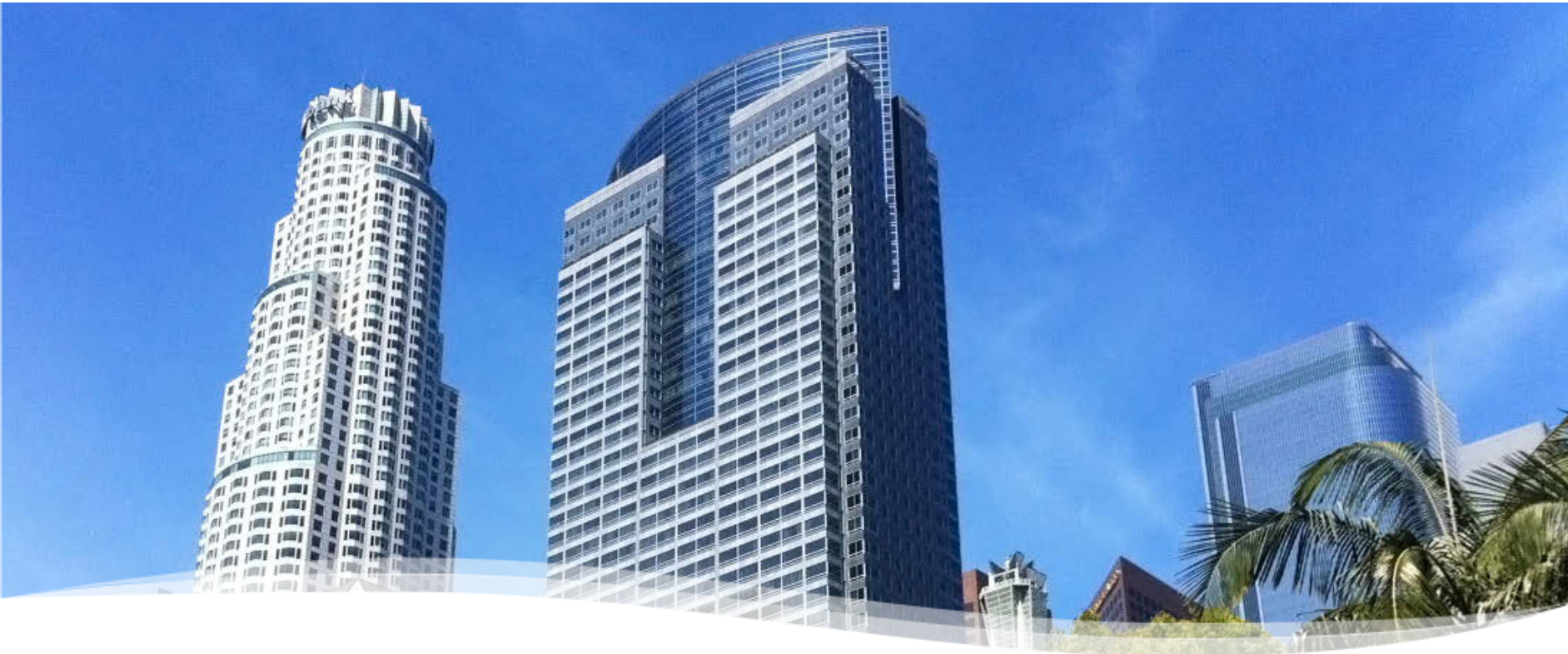
www.EnterpriseCommunity.org/readytorespond

Discussion Highlights: Enterprise Community Partners

- Check out Enterprise Community Partner's [Ready to Respond: Strategies for Multifamily Building Resilience](#), a collection of 19 practical strategies. Affordable multifamily building owners can find ways to make their buildings more resilient against the effects of extreme weather events. When thinking about resiliency:
 - Plan for both frequent threats and extreme events.
 - Consider the ways in which the surrounding area, geographical siting, and utility infrastructure impact your site.
- **Resiliency is a smart investment:** Planning pre-disaster can protect against future losses, save on energy use, reduce operational expenses, and help tenants recover more quickly after a disaster.
- **Close-knit communities are more resilient:** People that stay in communication and share resources are stronger in crisis.

Best Practices: Southern California Gas Co

Mark Drake, Manager
Mugi Lukito, Program Advisor



IT TAKES A VILLAGE:

Greening Los Angeles' Affordable Multifamily Housing Stock

DOE PEER EXCHANGE: "RESILIENCE & EE IN LOW-INCOME COMMUNITIES"

Thursday, July 13, 2017

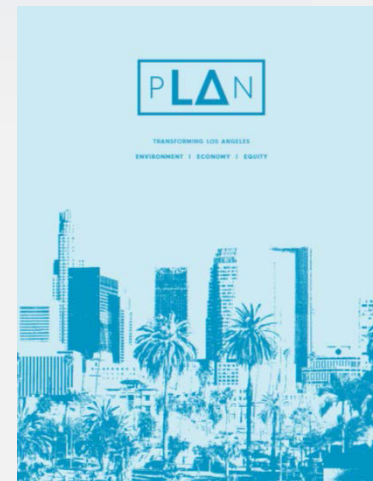
LA – The “Push” for Energy Efficiency

- LADWP is municipal electric & water provider in most of Los Angeles; and SoCalGas is natural gas provider
- Prior to 2012, very few City of LA initiatives to push for energy efficiency
- Primarily, state level energy mandates
- In 2012, LA City Council approved mandate to reduce energy consumption by 10% by 2020 (later updated to 15%)
- \$265 million for two years was made available to LADWP’s EE programs



LA – The “Push” for Energy Efficiency

- SoCalGas has implemented EE programs under California Public Utilities Commission since 1980s
- The City’s 2012 commitment and sizable funding allow SoCalGas & LADWP to partner together
- In 2013, The City of LA released Sustainability pLAn with aggressive goals:
 - 45% GHG reduction by 2025, 80% by 2050
 - 100% coal-free by 2025
- New policies for existing buildings in the works



Push - Pull

PUSH

City of LA
Regulations &
Policies

State, Regional and
Federal Regulations
& Policies
(eg. AQMD)

Government
Financing/ Tax Rules
and Regulations
(eg. CTCAC)

Energy Efficiency/
Sustainability of Multifamily
Properties in Los Angeles

PULL

Utility Programs
and Services
(eg. LADWP's and
SoCalGas')

City Agencies and
Voluntary Programs
(eg. HCID-LA,
HACLA)

Private and non-
profit organizations
(eg. LABBC, CHPC)

SoCalGas – LADWP “Marriage”

- SoCalGas & LADWP signed “Master Agreement” in Sept ‘12 to partner in delivering customer programs
- 18 Co-funded programs, operating budget \$80 million/yr
- Joint-portfolio – Adding 3-5 new programs every year
- Energy Savings Assistance Program provides no-cost EE & water measure installation for LA low-income multifamily residents, jointly funded - \$10 million/yr
- Assigned “Single-Point-of-Contact” (SPOC) for multifamily portfolio owners – “Total Utility Solutions”



HACLA

- Largest affordable housing provider in LA, over 100 sites
- HACLA Public Housing manages over 6,500 units & HACLA Asset Management manages about 2,500 units
- In 2014 (CA drought), HACLA received mandate to reduce water consumption in its properties
- HACLA contacted SoCalGas & LADWP – SoCalGas SPOC Account Manager assigned manage portfolio
- It started a long-term relationship between HACLA & both utilities



HACLA – Measures Installed

Utility Efficiency Program	Equipment Installed at Asset Management Properties	Equipment Installed at Public Housing Properties
SoCalGas & LADWP Energy Savings Assistance Program	<ul style="list-style-type: none"> • Weather stripping • High Efficiency Lighting • Smart Power Strips 	<ul style="list-style-type: none"> • Weather stripping • High Efficiency Lighting • Smart Power Strips
SoCalGas Middle-Income Direct Install Program	<ul style="list-style-type: none"> • Low-flow faucet aerators • Low-flow showerheads • Weather stripping 	<ul style="list-style-type: none"> • (Not Applicable)
SoCalGas Multifamily Direct Therm Program	<ul style="list-style-type: none"> • Low-flow faucet aerators • Low-flow showerheads 	<ul style="list-style-type: none"> • Low-flow faucet aerators • Low-flow showerheads
SoCalGas On-Demand Efficiency Program	<ul style="list-style-type: none"> • On-Demand Controller for hot water pumps 	<ul style="list-style-type: none"> • (Not Applicable)
SoCalGas Multifamily Rebates	<ul style="list-style-type: none"> • Central water heaters • Instantaneous water heaters 	<ul style="list-style-type: none"> • Central water heaters • Instantaneous water heaters
LADWP Water \$mart Rebate Program	<ul style="list-style-type: none"> • Low-flow toilets 	<ul style="list-style-type: none"> • Low-flow toilets
LADWP Custom Performance Program	<ul style="list-style-type: none"> • (Not applicable) 	<ul style="list-style-type: none"> • Hose bib restrictors

HACLA – Results

(As of June 30, 2017)

Utility Efficiency Program	Asset Management Units Served	Public Housing Units Served	HACLA - TOTAL
SoCalGas & LADWP Energy Savings Assistance Program	585	1,248	1,833
SoCalGas Multifamily Direct Therm Program	510	4,411	4,921
SoCalGas On-Demand Efficiency Program	1,307	976	2,203
SoCalGas Multifamily Rebates	-	876	876

- Installed measures resulted in 27% reduction in observed water usage
- HACLA could save \$500k in annual operating savings, and \$3-million in net operating costs over the lifetime
- HACLA was awarded the top honor, “Portfolio of the Year” at LABBC’s 2nd Annual Innovation Awards

Other Properties

- **Expanding SoCalGas' SPOC Account Manager initiative, now working with many other portfolios**
- **ESAP is working with more than 19,900 MF units across Southern California, with 7,800 units in LA**
- **SoCalGas is working with more than 13 owners, with 624 properties & over 44,500 units**
- **Policy is an important driver - gateway to more opportunities**
- **Support from trade associations & advocacy groups invaluable**

Lessons Learned / Best Practices

- **Start with right policies – Government as initiator**
- **Joint-utility integration delivers ‘Win/Win/Win’**
- **Have utilities & other program administrators work together instead of competing. Eliminate silos**
- **Have government agencies support one another, foster collaboration, share success. Support presence of advocacy groups & trade associations**
- **SPOC Model Works: Centralize communication & engagement with decision-makers. Fully integrated delivery via SPOC delivers deep energy/water savings & increases level of service**

Questions?

- **Mark Drake**
Manager, Residential New Construction, IDSM & Municipality Coordination
- **Mugi Lukito**
Program Advisor, IDSM & Muni Coordination

Presentation Highlights: Southern California Gas Co

Work with other utilities to move towards joint utility partnering and a single source for customers.

- Though gas, electric, and water utilities provide separate services, this siloed approach leads to higher cost, a more complicated process for customers, and results in missed opportunities to reach target audiences. **Southern California Gas Co works with other utilities to combine funding and streamline efficiency projects.**

Make it easy for the housing authority and large property owners.

- Southern California Gas Co assigned an account rep to their large portfolio owners to interact on a portfolio, rather than property, level and capture greater savings.

Best Practices: The American Council for an Energy-Efficient Economy (ACEEE)

Ariel Dreihobl, Research Analyst



How Energy Efficiency in Low-Income Communities Leads to Energy Affordability and Resilience

Ariel Drehabl

Research Analyst

American Council for an Energy-Efficient Economy

DOE's Better Buildings Residential Network peer exchange call

July 13th, 2017



The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

aceee.org @ACEEEdc

ACEEE
American Council for an Energy-Efficient Economy

Lifting the High Energy Burden in America's Largest Cities:

How Energy Efficiency Can Improve Low
Income and Underserved Communities

Ariel Dreihobl and Lauren Ross



What Is an Energy Burden?

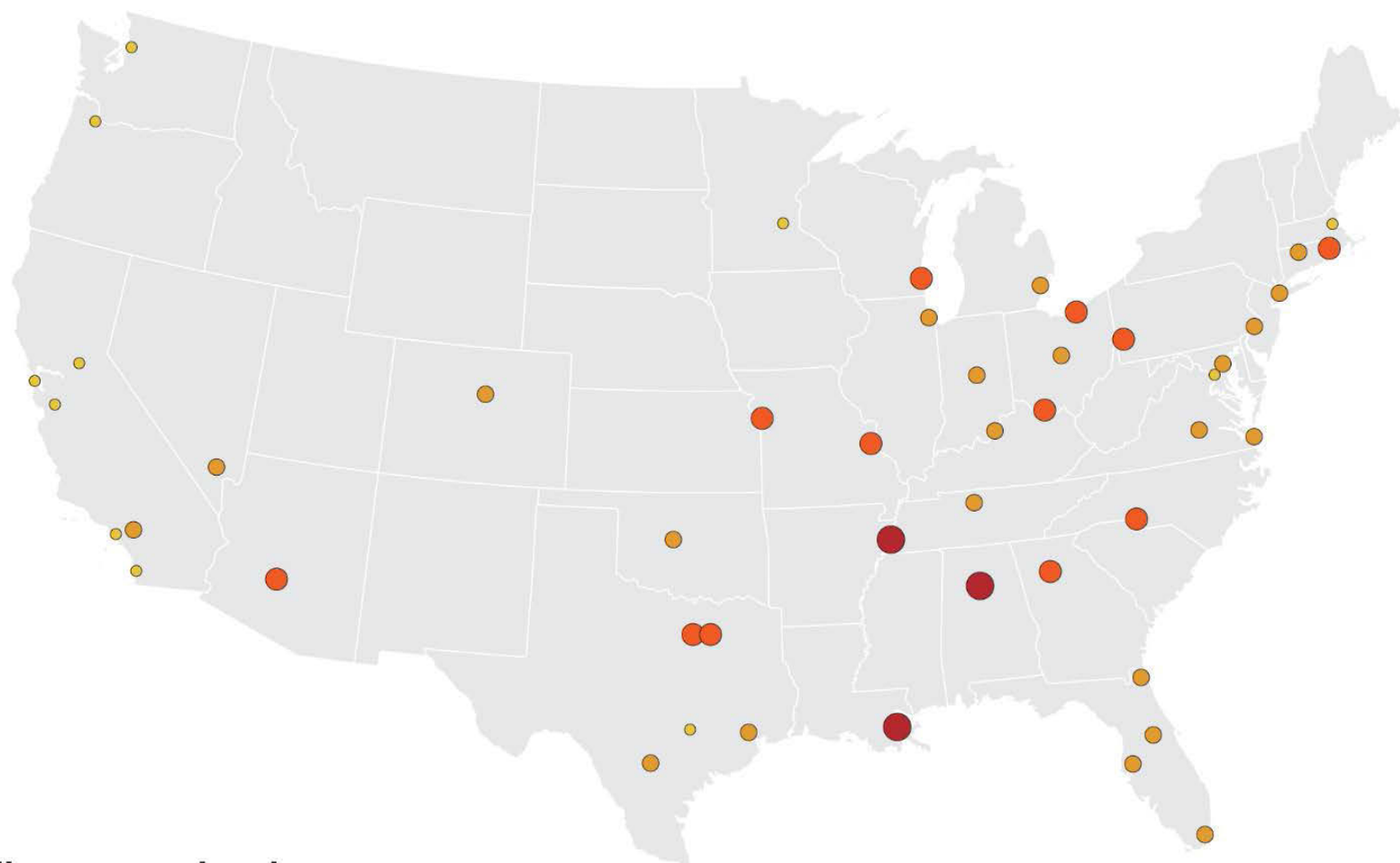
- Proportion of household income spent on utility bills
- Researchers identify 6% as initial indicator of "high energy burden"
- Physical, economic, political, & behavioral factors drive high energy burdens
- 3.5% median burden across metro households
- 7.2% median low-income burden across metro households



How We Measured Energy Burden

- American Housing Survey, 2011 & 2013 data
- Excluded households that did not pay for electricity, main heating fuel, or report income
- Deeper dive into four subgroups:
 - **Low-income (80% Area Median Income)**
 - **Communities of Color (African American & Latino Households)**
 - **Low-income multifamily households (80% AMI and 5+ units)**
 - **Renters**

Median Energy Burdens in U.S. Cities

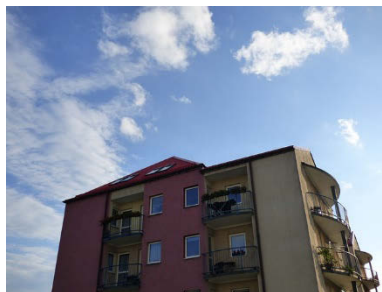


Median energy burden

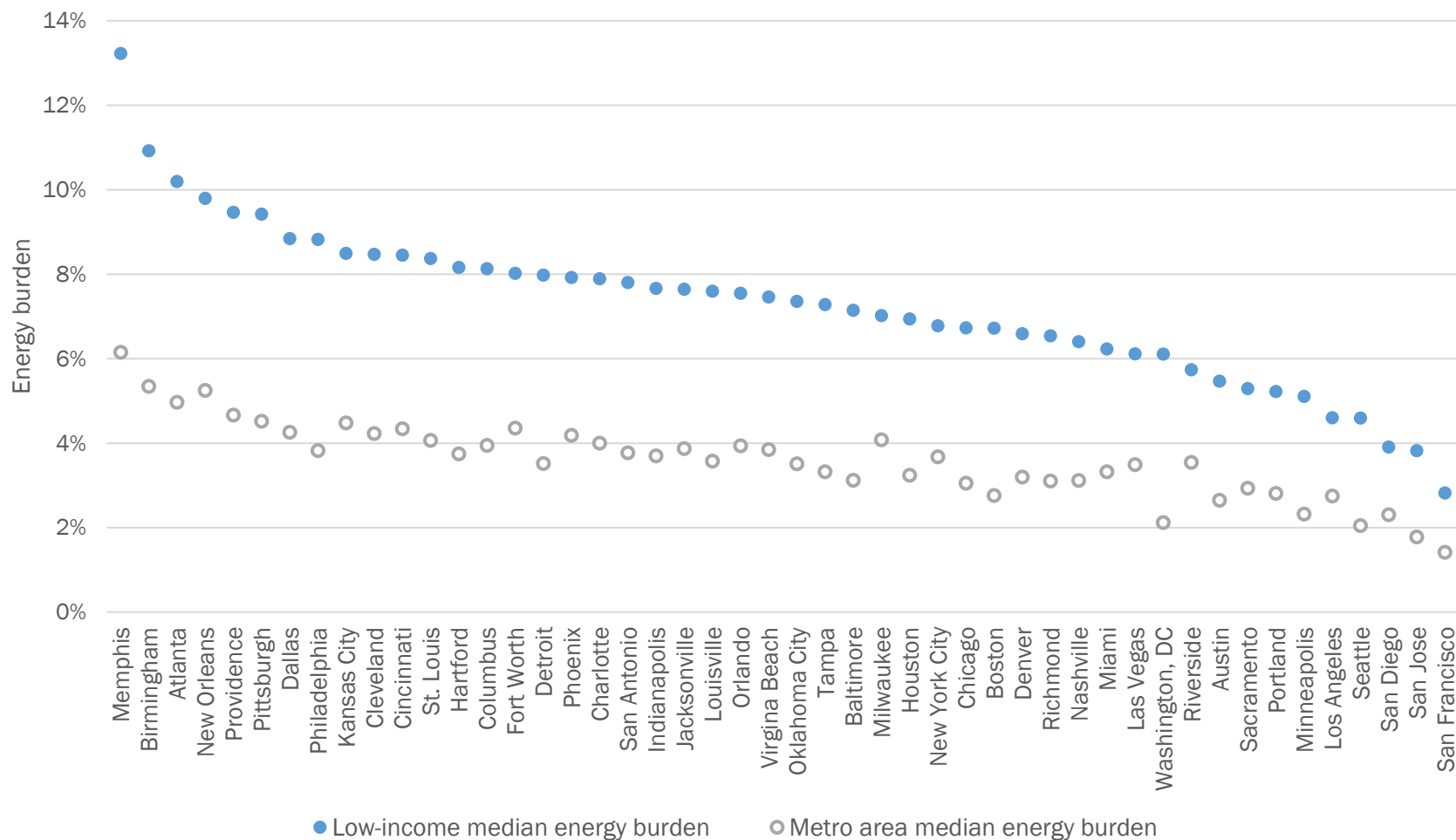
● 5+% ● 4-5% ● 3-4% ● 1-3%

Major Findings

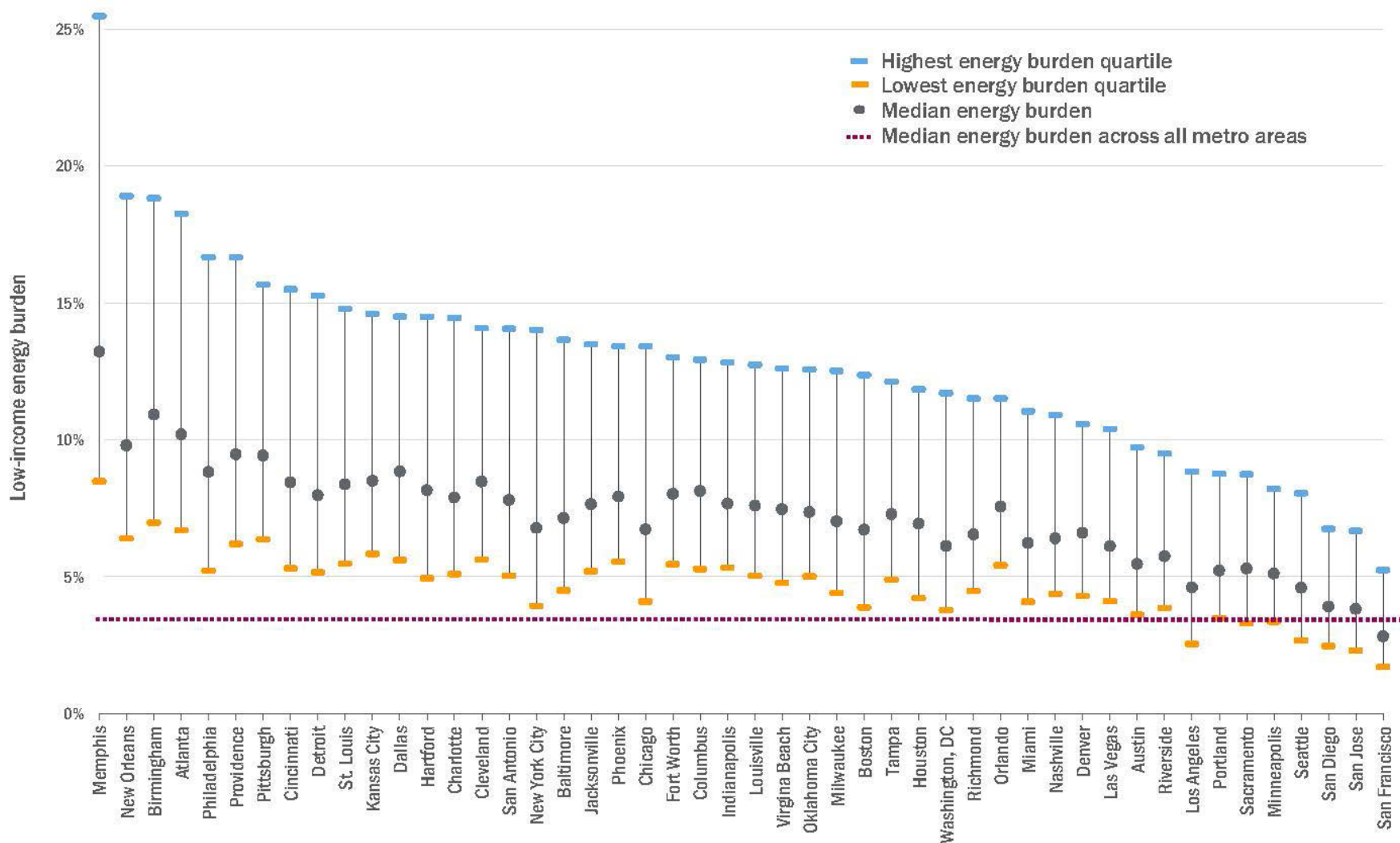
- Low-income burdens on average twice as high as average & three times as high as non-low-income
- African American Latino, multifamily, and renting households all experienced higher burdens than average
- Low-income, African American, Latino, and renting households all pay more per square foot for their energy, indicating less efficient homes



Median Energy Burden of Low-Income and Average Households



Range of Low-Income Energy Burden Quartiles



Benefits of Energy Efficiency & Community Resilience

- Low-Income Benefits
 - Lower bills, improved housing stock, etc.
- Utility and Ratepayer Benefits
 - Avoided costs of additional generation, reduced arrearages, etc.
- Whole Community Benefits
 - Reduced pollutants, local job creation, etc.
- Resilience Benefits
 - Improved emergency response and recovery, social and economic resilience, and climate change mitigation and adaptation resilience

WHY

ENERGY-EFFICIENT COMMUNITIES ARE MORE RESILIENT

Energy efficiency can make communities more resilient by strengthening energy systems and providing more-reliable and affordable energy to local governments, households, and businesses. Its potential as a resilience building tool is clear when all its benefits are viewed together. Energy efficiency helps reduce vulnerability to the diverse hazards a community may encounter, like a hurricane or even economic volatility, and increases the community's capacity to cope with the damaging impact of those hazards.

Benefit Types



Emergency response & recovery

Energy efficiency can help communities respond to and recover from emergencies and disturbances, through measures like combined heat and power (CHP), which keeps lights on, or well-insulated buildings, which allow residents to shelter in place.



Social & economic

Social and economic conditions can make communities more susceptible to the effects of disturbances. Energy efficiency addresses some of these conditions, improving the everyday resilience of households and the local economy.



Climate mitigation & adaptation

Energy efficiency can also mitigate climate change by decreasing carbon pollution and boost communities' social, economic, or physical capacity to adapt to climate change's impacts.

Strategies for Improving Energy Efficiency in Low-Income Communities

1. Advocate to the PUC for spending & savings targets
2. Incorporate best practices into design and delivery
3. Adjust cost-benefit testing to include multiple benefits
4. Provide financing with strong consumer protections
5. Collect, track, and report demographic data on program participation
6. More effectively leverage existing programs



Resources

Recent Low-Income Reports:

- Baseline Assessment, July 2017:
[aceee.org/white-paper/low-income-ee-baseline](https://www.aceee.org/white-paper/low-income-ee-baseline)
- Lifting the High Energy Burden, April 2016:
[aceee.org/research-report/u1602](https://www.aceee.org/research-report/u1602)
- Building Better Low-Income Programs, March 2016:
<http://www.aceee.org/research-report/a1601>

Other Resources

- ACEEE Low-Income Utility Working Group
- Multifamily Energy Savings Project:
[aceee.org/multifamily-project](https://www.aceee.org/multifamily-project)
- ACEEE Policy Database: database.aceee.org

Questions?

Ariel Drehabl
Research Analyst
Local Policy, ACEEE



Presentation Highlights: ACEEE

Findings from ACEEE's study on the relationship between the energy burden and low income housing:

- High energy bills lead to more than just depleted wallets: ACEEE found that **families suffering from high energy burdens also have higher stress levels from** living with the fear of losing power and gas due to their inability to pay bills.
- High energy bills are not necessarily correlated with high electricity and gas prices: ACEEE found that **the Southeast and Midwest regions, while having among the lowest average prices, also had the highest average metropolitan energy burdens.**

Additional Resources (1 of 2)

2017 Better Buildings Summit Presentations:

- [All-In: States, Localities, Utilities, and Nonprofits Creating Solutions for Underserved Communities](#)
- [A Common Purpose: Aligning Community Stakeholders to Address Gaps in Underserved Markets](#)
- [Scaling Up Clean Energy Programs to the Next Level for Low and Moderate Income Households](#)

Additional Resources (2 of 2)

Reports and Resources:

- [Enhancing Community Resilience through Energy Efficiency](#) – American Council for an Energy-Efficient Economy (ACEEE)
- [Solar+Storage for Low- and Moderate-Income Communities: A Guide for States and Municipalities](#) - Clean Energy States Alliance (CESA)
- [Resilience for Free: How Solar+Storage Could Protect Multifamily Affordable Housing from Power Outages at Little or No Net Cost](#) – Clean Energy States Alliance (CESA)
- [Community Resilience Portal](#) - Housing and Urban Development (HUD)

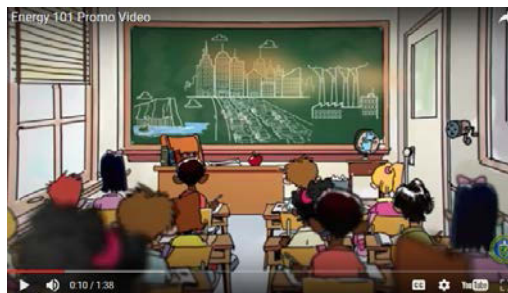
Upcoming Seasonal Messaging Opportunities

Sept 22 – Dec 20
Fall Season



**The Residential
Energy Services
Network (RESNET)
Poster**

**End of August &
September**
Back to School



**U.S. Department of Energy
Article & Video: 5 Back-to-
School Resources to Help
You Learn About Energy**

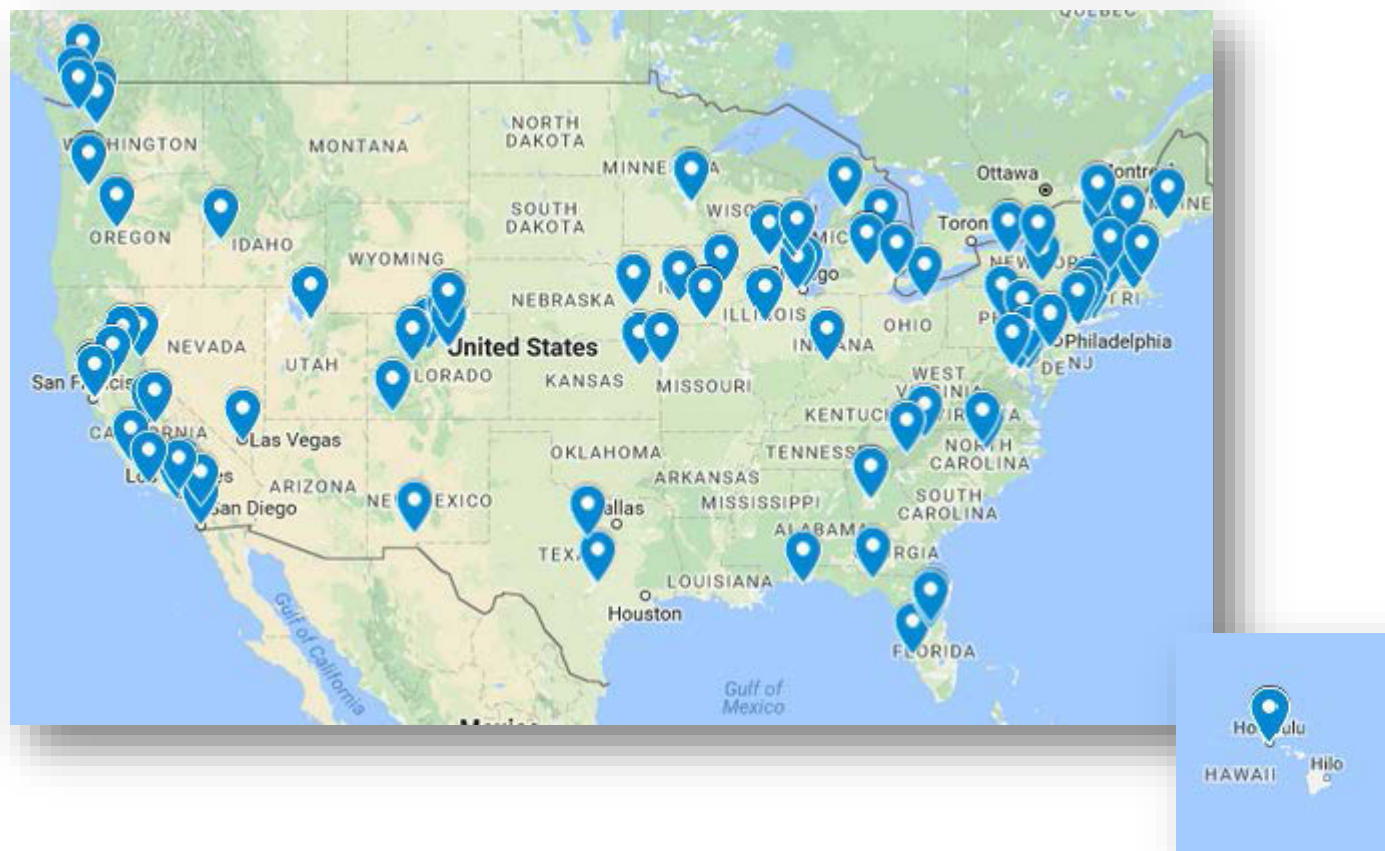
September 10
**National
Grandparents
Day**

*Visit the Better
Buildings Residential
Network website for
seasonal messaging
ideas:*

*Fall: Energy Saving
Changes with the
Season*

Addenda: Attendee Information and Poll Results

Call Attendee Locations



Call Attendees: Network Members (1 of 3)

- American Council for an Energy-Efficient Economy (ACEEE)
- BC Hydro
- Boulder County
- Center for Energy and Environment (CEE)
- Center for Sustainable Energy
- City of Berkeley
- City of Cleveland
- City of Fort Collins
- City of Providence
- Civic Works
- CLEAResult
- Connecticut Green Bank
- Delaware Sustainable Energy Utility
- Delmarva Power
- District of Columbia Sustainable Energy Utility (DC SEU)
- Earth Advantage Institute
- Efficiency Maine
- Efficiency Vermont
- Energy Efficiency Specialists
- EnergySavvy
- GoodCents
- Green & Healthy Homes Initiative

Call Attendees: Network Members (2 of 3)

- High Country Conservation Center
- Home Performance Guild of Oregon
- Honeywell International, Inc.
- Horizon Residential Energy Services NH, LLC
- Housing Authority of the City of San Buenaventura
- HUB Energy Group
- International Center for Appropriate and Sustainable Technology (ICAST)
- Kentucky Housing Corporation
- Long Island Power Authority (LIPA)
- Louisiana State University AgCenter Extension - LaHouse Resource Center
- Michigan Saves
- Mitsubishi Electric Cooling and Heating
- Modular Lifestyles
- National Grid
- NeighborWorks of Western Vermont
- New Jersey Board of Public Utilities

Call Attendees: Network Members (3 of 3)

- New York State Energy Research & Development Authority (NYSERDA)
- Nexus Energy Center
- OmStout Consulting
- Operation Green Team
- Optimal Energy, Inc.
- Ouachita Electric Cooperative
- Park City Municipal Corporation
- Southface
- Stewards of Affordable Housing for the Future
- Texas Energy Poverty Research Institute
- The Insulation Man, LLC
- TRC Energy Services
- Wisconsin Energy Conservation Corporation (WECC)

Call Attendees: Non-Members (1 of 4)

- AJO
- Alternative Energy Systems Consulting, Inc.
- Americorps
- Apogee Interactive
- Appalachian Voices
- Architectural Nexus
- BC Housing
- California Institute of Environmental Design and Management (CIEDM)
- California Public Utilities Commission
- CIC Energy Consulting, LLC
- City of Asheville
- City of Atlanta, Mayor's Office
- City of Bend
- City of Bloomington
- City of Orlando
- Clallam PUD
- Community Office for Resource Efficiency
- Consortium for Energy Efficiency (CEE)
- County of Santa Barbara
- Craft3
- Decent Energy
- DNVGL Energy
- Duke University
- E4TheFuture

Call Attendees: Non-Members (2 of 4)

- Energetics Incorporated
- Energy Independent Bloomfield
- EnergyWorks
- Environmental and Energy Study Institute
- Florida Department of Agriculture & Consumer Services, Office of Energy
- Franklin Energy Group
- Frontier Energy
- Gary E. Hanes & Associates, LLC
- Geothermal Design Center
- Green Energy Committee
- Integrative Design & Architecture
- Kansas Housing Resources Corporation
- La Plata Electric Association
- Lawrence Berkeley National Laboratory
- LEENA Labs
- Leidos
- Lockheed Martin
- Mayberry Energy Inspections
- Mercy Housing
- Michigan Environmental Council
- MN Dept of Commerce
- Murray Hill Medical Group

Call Attendees: Non-Members (3 of 4)

- National Association of Home Builders
- National Council of Structural Engineers Associations
- Neighborhood Housing Services of Jamaica
- New Ecology, Inc.
- New Hampshire Electric Cooperative
- Off The Grid Renovations, LLC.
- Penn State/Pennsylvania Housing Research Center
- Pennsylvania Public Utility Commission
- People's Self Help Housing
- Proctor Engineering Group
- Renew Financial
- Retrofit Baltimore
- Robinson Sustainable Builders LLC
- San Joaquin Valley Clean Energy Organization
- San Francisco Environment
- Sarasota Co
- Seattle City Light
- Sierra Business Council
- Smaart House
- Snohomish County PUD
- SoCalGas

Call Attendees: Non-Members (4 of 4)

- Sustainable South Bronx
- Tarleton State University
- TRC
- UMass Amherst
- University of Minnesota
- Verdis Group
- Virtuelements

Opening Poll #1

- Which of the following best describes your organization's experience with resilience and energy efficiency in low income communities?
 - Some experience/familiarity – **56%**
 - Very experienced/familiar – **23%**
 - Limited experience/familiarity – **15%**
 - No experience/familiarity – **4%**
 - Not applicable – **2%**

Closing Poll

- After today's call, what will you do?
 - Consider implementing one or more of the ideas discussed – **24%**
 - Seek out additional information on one or more of the ideas – **72%**
 - Make no changes to your current approach – **2%**
 - Other (please explain) – **2%**